

E komo mai a'e pae!
Welcome to the Next Level!



3rd Mate Training Workbook

Revised 2019

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Trilogy History

The Coon History

In 1888, three brother, Frank, Meade, and Austin, traveled west from Minnesota and established one of the first historical health sanitariums in the state of Washington. Thirty plus years later, Meade's two sons, Eldon and Afton, built a fishing boat in Port Townsend, WA and set sail for Alaska. The brothers settled in the towns of Sitka and Ketchikan to raise families of their own.

Eldon carried on the family's waterlust. In 1969, a shipwreck forced Eldon and his wife Jannette to sell their home in Alaska and relocate to Seattle WA. With the help of their three children, Jim, Rand, and Pattie, they built another boat. The 50' sailing trimaran was completed in 1971. The family christened it Trilogy. For two years, the family traveled up the Alaska then down to Mexico, Central and South America, the Galapagos Islands and eventually to the South Pacific.

As fund began to run low, the family decided to sail to Hawaii and work until the ship stores were replenished before continuing on their circumnavigation of the globe. Upon arriving in Hawaii, the family fell in love, not only with the island, but their sons fell in love with a few island girls. The family decided to settle on the island of Maui.

Trilogy History

On July 5, 1973 Trilogy Excursions officially started their daily journey to the private island of Lana'i. Their max capacity was 6 passengers. Since that humble beginning, Trilogy Excursions *Discover Lana'i* excursion has become an institution, delighting thousands of visitors each year with the best that Hawaiian hospitality has to offer. In 1982, with the passing of Captain Coon Sr., the business was continued under the supervision of Jim and Rand.

"It's not just a business, it's a whole way of life" – Coon Brothers

Over the passing decades, Trilogy Excursions have expanded their operations to include not only their signature charter, *Discover Lana'i*, but the *Discover Molokini* and *Discover Ka'anapali*. With additional tours, the fleet has expanded and upgraded to include 6 vessels.

T1	55ft	2019	Gold Coast
T2	64 ft	2010	Schooner Creek
T3	65 ft	2016	Gold Coast
T4	65 ft	GCY	Gold Coast
T5	55 ft	GCY	Gold Coast
T6	55ft	2000	Pacific Rim

A Key aspect that sets Trilogy apart from other companies is our Lana'i Agreement. This agreement was established before Trilogy Excursions was in operation. When the idea of the *Discover Lana'i* was dreamt of, before starting operations, the Coon Family approached the Kapuna of Lana'i and asked for permission to bring their guests to the beaches and harbors. Part of the negotiations was that Trilogy would not run charters on weekends and holidays so local family can use the beach in its entirety. Trilogy has upheld and honored these terms for over 45 years, keeping our relationship with the Lana'i community intact.

Trilogy Flags

The flags that are displayed on our boats spell out Trilogy in the international code alphabet. Each flag stands for a letter and a significant meaning in the international code. The international code

was developed so that seaman world wide could converse and signal each other without having a common language

	T	TANGO - Keep Clear of me; I am engaged in trawling
	R	Romeo – The way is off my ship
	I	INDIA – I’m altering my course to port
	L	LIMA – <i>at sea</i> : You should stop your vessel instantly
	O	OSCAR – Man Overboard
	G	GOLF – I require a pilot
	Y	YANKEE – I am dragging my anchor

Trilogy Family and Ohana

Trilogy family members have always played an active role in the daily operations of the company. Trilogy is currently in its third-generation of leadership. Jim and Rand (2nd generation) spent the entirety of their adult lives building and operating the business. They integrated and encouraged all of the “Coon kids” – six in total – to work in the company from a very young age in virtually all departments; from baking cinnamon rolls, maintenance, and crewing on boats. Since then, the “Coon kids” have grown in the company to take on larger responsibilities and hold key manager positions. Some of their spouses also work in the business and hold key positions.

Eldon and Jeannette Coon					
Jim Coon: CEO			Randy Coon: Retired		
Meili Coon Not involved in company	LiAnne Dressen Director of Sales and Marketing	Riley Coon Director of Operations Wife: Jenny Group Sales and Vendor Relations	Lily Campbell Group Sales	Ginger Lucy Director of Administration Husband: Gabe President	Denver Coon General Counsel

Trilogy Eco-Values and Hawaiiana

Trilogy has already strived to be innovators in the marine industry. All of Trilogy's vessels are 100% green. That means that no effluents (poop) are pumped into the ocean. Trilogy was the first boating company to retrofit its entire fleet with holding tanks. Trilogy also works with several agencies to lead and coordinate community service reef clean-ups through our Blue 'Aina program, fish count surveys, mooring replacement projects, and zero impact eco-tourism. Our goal is to preserve and protect the environment through sustainable operation procedures.

We choose to educate our staff and guests not only about environmental issues, but cultural as well. We support higher education for our crew at Maui Community College for approved Hawaiian education. Learning the environment and culture is a key element for your success at Trilogy.

Introduction to Hawaii

Discovery of the Islands

Archeologists have long believed that the Hawaiian Islands were settled around 70 AD. There is some evidence that exists showing the islands settled as early as 500BC. What we do know is that the first migrants were most likely from the Marquesas and Society Islands.

The Marquesas Islands are very small and harsh islands. The Marquesan's were thought to be a cannibalistic society. Often when wars were fought, the losers were given the option to leave and never come back or be eaten. This competition for land and consequences of losing in battles is believed to have been a major factor in the discovery of Hawai'i. The migrating vessels were large catamaran style sailing canoes capable of carrying entire families or clans. Traveling with the people were livestock, supplies and plants for settling a new land.

Navigation or wayfinding was accomplished through detailed watching of the wind, waves, stars, and birds. Chants tell that Hawai'i island was settled first. Because of the expanse of unpopulated land, cannibalism diminished after arrival to Hawai'i. It wasn't until a new wave of migrating Tahitians around 1250AD that cannibalism started to resurface.

Knowledge was passed from generation to generation through chants and stories. Of the ancient chants that still exist, they paint a picture of regular voyages between the new homestead in Hawaii and the South Pacific. Today members of the Polynesian Voyaging Society (PVS) make the same journey in traditional canoes without the help of modern navigational instruments. Nainoa Thompson is the chief navigator of the Hōkūle'a.

Eight Major Islands

1. Hawai'i (Big Island)
2. Maui
3. Kaho'olawe
4. Lana'i
5. Molokai
6. O'ahu
7. Kaua'i
8. Ni'ihau



Rediscovering of the Islands

The Hawaiian Islands were rediscovered in 1778 by Captain James Cook. Captain Cook was commissioned by England to find a passage between the Atlantic and the Pacific Ocean. This voyage was his third into the Pacific Ocean around Cape Horn following the footsteps of Captain Ferdinand Magellan. Captain Cook was believed to be one of the greatest navigators of his time. His expertise in navigation allowed him to place together many pieces of information about the Pacific, which helped England to draw an accurate map of the Pacific Ocean.

Unfortunately, Captain Cook was killed on the Big Island at Kealahou Bay following a tragic series of misunderstandings due to cultural differences. His ship sailed home without most of his remains. But it took the location of the Hawaiian Islands to the Queen. The discovery of Hawai'i reinforced the opportunity for exploration of the Pacific for England.

Endemic, Indigenous, and Invasive plants and animals

The Hawaiian archipelago is several thousand miles away from other land masses. Because of this distance, Hawai'i's native ecosystem was extremely isolated. Many of the species of plants and animals found in the islands could not be found anywhere else in the world. These species are considered **endemic** because of the rarity and geographical isolation. These include taro, uala (sweet potato), Ohia, and Lauhala. Over 90% of America's endemic species are found in Hawai'i. Of that 90%, over 70% are currently extinct. This is just one reason Trilogy endeavors to preserve and protect our islands.

Indigenous species are species of plants and animals that are naturally found in the environment, but not exclusively to a particular geographic range. Due to Hawai'i's isolation, there are very few land based indigenous species. However in the surrounding oceans, there are several indigenous species such as the green sea turtle, the Humuhumunukunukuapua'a, or manta rays. These are examples of species that are native to the islands but occur naturally in other places in the world.

Invasive species are species that were introduced by man. When Polynesians first arrived in Hawai'i they brought with them banana, ti, palm, papaya, guava, dogs, pigs, and several other plants that were vital for their survival. Many of these plants integrated into the environment with little to no effect. However, plants and animals introduced after western contact had a detrimental effect on the native ecosystems.

Endemic — Only found in one geographic area

Indigenous — Naturally found in the region, but occurs naturally in other places too

Invasive — Introduced to the

Plants like Kīawe were responsible for choking out several nearshore plant species like the Hawaiian Sandelwood and absorbing precious ground water, creating arid climates. Rats carried onboard European vessels carried new diseases infecting native animals and peoples which lead to the introduction of the mongoose to control rat populations. Rats, however, are nocturnal and mongooses are diurnal causing the mongoose to target native bird populations. Mosquitoes were introduced when water barrels were brought ashore to be filled. These invasive species, along with other, are largely responsible for the extinction of much of Hawai'i's endemic species.

History of Lāhaina

Lāhaina has a long and rich cultural history. After the islands were conquered by King Kamehameha the Great, he declared Lāhaina his home and the capital of Hawaii. As more and more missionaries began to arrive in the islands, King Kamehameha III appointed William Richards, a Lāhaina missionary, advise the king on the subject foreign affairs. As Hawaiians had no written language, Richards created the Hawaiian alphabet to teach reading and writing through a translated Hawaiian bible.

By 1831, a growing number of students necessitated the creation of Maui's first school which still operates today, Lāhainaluna. Lāhainaluna was the first highschool west of the Rocky Mountains. In the early 1920's the Hale Pa'i, or house of printing was created on school grounds and brought about the creation of Hawai'i's first printed newspaper.

Lāhaina also served as a whaling re-supply center being commonly referred to as the whaling capital of the Pacific. Lāhaina was the port that whaling ships could bring their oil and cargo for transfer and re-supply in order to get back to the whaling grounds quickly. With the addition of Kuau'i into the Royal Kingdom of Hawaii, the Capital was moved to Honolulu in 1848.

History of the 'L'

A common question on our west side charters is,

"What does the 'L' on the hill stand for?"

The 'L' was a signaling device for Lāhainaluna High School. The school itself was and still is a residence school with housing available for students. The 'L' was prepared every year to be set afire 1 wee before graduation. The preparation was done by the senior class. It is said that the burning of the 'L' could be seen from all of Maui county and sometimes O'ahu. Parents of the students would watch from their islands and see when the 'L' was lit so they could arrange to pick up their children.

Operations

Names

At this point, you should be able to learn and use 15 names on a daily basis. You should make it a point to learn to use your name card effectively



King Kauikeaouli 1825-1854

Putting the Icing on the Cinnamon Rolls

Breakfast service is an extremely important time of the day for us. This when we get to reinforce the first impressions we have made. Serving our breakfast can be fun. Our cinnamon buns are world class. The recipe was handed down through four generations. They are baked fresh daily. The fresh fruit tray is an island staple. All these things together lead up to one fantastic breakfast. You will be amazed at the guest's reactions when you take your time to hype it up.

Making Lunch Special

Lunchtime is a very special time for us. Our customer service should always be great, but at lunchtime it needs to be off the charts. Here are a few hard and fast guidelines to help you.

- Go out of your way to wait on our guests.
- On non-DL trips, the crew should pass the silverware and drinks; hand it to a person
- Service should be done with a smile
- When passing food, serve children and women first as per Hawaiian culture
- Be ready to bus plates; guests should not need to bring dishes to the galley

Problem Recognition

Often people tend to ignore or not address guests' problems hoping they will go away. This denial is like painting over rust; its still there and eventually resurfaces or spreads. Recognizing a problem and addressing it is the right thing to do for all parties involved.

If you see guests put their fins on and start backing down the beach, you may assume that they didn't listen to the captains briefing or have not done this before. Catching this early and recognizing that they person may need special attention. Not only will this save you a lot of time later but will also give you a chance to have a positive interaction with the guest that they will appreciate. Be helpful and compassionate to their issues. If the problem is beyond your ability, include your captain.

Personality Types

Sometimes we get interesting characters on our charters. Recognizing different personality types is important for your relations with the guests. Interesting is great! Abusive isn't. If you ever encounter a personality that is verbally or physically abusive, be sure to inform your captain immediately.

Fielding complaints

Most of the time, a problem or potential complaint can be identified from a comment from one guest to another. It is easier for them to complain to someone else who they feel will be sympathetic. This where we get to surprise them by being good listeners. Most people just want to be heard. Here are a few easy steps to follow:

1. Listen to their comments and repeat it back in a nice manner. This affirms that you care enough to listen.
2. Be empathetic to their complaint. You don't have to agree with it but by putting yourself in their shoes and acknowledging their feelings helps them validate their feelings
3. Offer a positive solution. Even if they don't take you up on it they know you tried

Here's an example:

GUEST: “The snorkeling here is horrible.”

YOU: “I’m sorry to hear you felt that way. What was bad about it?”

GUEST: “The reef is dead. There aren’t any fish. When I went to the Caymans, there were fish everywhere”

YOU: “Yes the Caymans is a beautiful place for snorkeling, but it’s a different ecosystem. In Hawaii, we don’t have many soft corals, mostly stony low reefs. Most of our fish live closer to the bottom too so they can be hard to see. Would you like me to point some out to you?”

Here you have acknowledged the guests frustrations, addressed it, and offered a positive solution that may cause their opinion of the entire encounter to change.

Boat Cleaning and Maintenance

Most of the boats get cleaned after the trip. Cleaning the boat will be broken into 5 major components of which can be divided amongst the crew.

1. **Washing whites, windows, rails and tables** – This should be done first by spraying everything down with a hose. Then take a bucket and add soapy water and use a microfiber to soap and clean all the whites. Follow with a rinse and dry. If it’s a hot day, work in sections or have someone following you to prevent the water drying and spotting the whites, stainless, and windows. This is also a good time to look at the hulls especially if you just took a lot of water over the bow on the way home. Make sure all the salt is off and there are no dirty streaks from lines or engine exhaust.
2. **Scrubbing the decks** – A spot clean is not a clean, although sometimes it is necessary. It is important that our decks get thoroughly scrubbed as often as possible. These includes the Main Deck, the Galley, the Heads, and the Cabin Top. Scrubbing should be done with a deck brush and bucket of soapy water. Prewet the decks to minimize having to fill your bucket. Soap should be rinsed off before it dries.
3. **Filling the water tanks** – This should not prevent or stall the washdown. Get everything wet before starting to fill the tanks. Finished soaping but the tanks aren’t full, simply pull out the hose and rinse and put it back into the tank to keep filling. In Lahaina, we are only allotted 30 minutes on the dock, sometimes less, so it is important to maximize this time.
4. **Cleaning the Galley** – Although this job seems the easiest, to do it correctly takes a greater depth of the boat. All dishes need to be cleaned and dry, all service items need to be stored, any low items need to be replenished from other storage or ordered on the prep list, and a thorough cleaning of the sinks, drying racks, and counters needs to be done. Typically, the Galley person is also responsible for scrubbing the Galley and cleaning the heads depending on the trip and number of crew.
5. **Scrubbing the heads** – The cleanliness of the heads is of the utmost importance. This is where a lot of people judge our boat the hardest. Make sure that all trash is taken out, the floors are scrubbed and clean, the toilet bowl is scrubbed, counters are wiped, mirrors are clean, and the sink is clean. Replenish all soap dispensers and paper towels at the end of the trip. You can take it to the next level by folding the end of the toilet paper, making sure the seat is down, and spritzing a little air freshener.

Ultimately you can never clean a boat too much. If you see anything that needs a little wipe, this is a great time to practice Pono, do what is right because you can, don't leave it for someone else or for our guests to see. It's the little things that add up and set us apart from other boat companies.

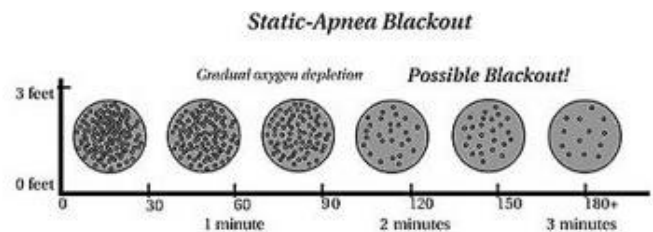
Freediving

Physiology

Let's start with the basics, like breathing. Preparing for a free dive requires preparation. Practice breathing through your abdomen versus your chest. Breathing through your abdomen allows your diaphragm to relax so you can fully exchange the air in your lungs. Breathing through the chest restricts you from exchanging a full breath which limits your oxygen intake. You should breath slowly and deeply, relaxing your mind and body.

Avoid the urge to hyperventilate.

Hyperventilation is when you take three or four quick breaths just before diving down. It is a common misconception that when you hyperventilate you store up oxygen. In reality, you are purging carbon dioxide from your blood stream. Carbon dioxide build up in your circulatory system triggers chemoreceptors to tell your brain to breathe. When you breathe in, your alveoli gather oxygen and purge carbon dioxide. If you hyperventilate your body will purge too much carbon dioxide and not trigger you to breathe before your oxygen supply is used. This is called **static apnea blackout**.



One of the best things you can do to maintain balanced oxygen and carbon dioxide levels in your blood stream is to rest between dives. A good rule of thumb is to spend twice as long at the surface as you did underwater on your last free dive. The human body is a complex and wonderful thing. By educating yourself on your physical limitations, you will become a safer and more effective free diver. A good reference is Freedive! by Terry Maas and Dave Sipperly.

Mental and Physical preparation for Apnea

A diver can train their mind to adapt to long periods without breath. By understanding the human body, you can learn what physical signs are dangerous and which are normal. This reduces anxiety levels which greatly reduces oxygen consumption underwater. Here are a few basics that will help a novice free diver.

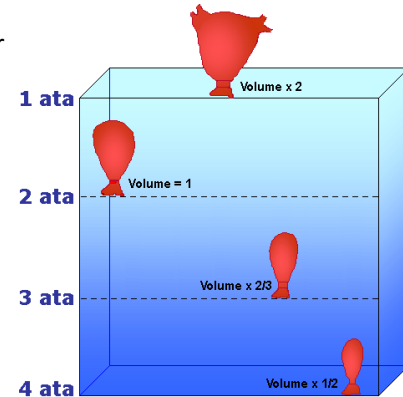
1. When you prepare to dive, you should wet your face first. By doing this a few times you will start to trigger the mammalian dive reflex. This response will cause your heart to slow. It has been found that even novice divers can experience a 50% decrease in heart rate after just 30 seconds of immersion
2. Breathe slowly and deeply from your abdomen. This allows you to start your dive with the fullest breath possible.
3. Clear your mind. Anything that distracts you consumes oxygen.
4. Just before diving, exhale completely and take a final breath.

Physics of Diving and Shallow Water Blackout

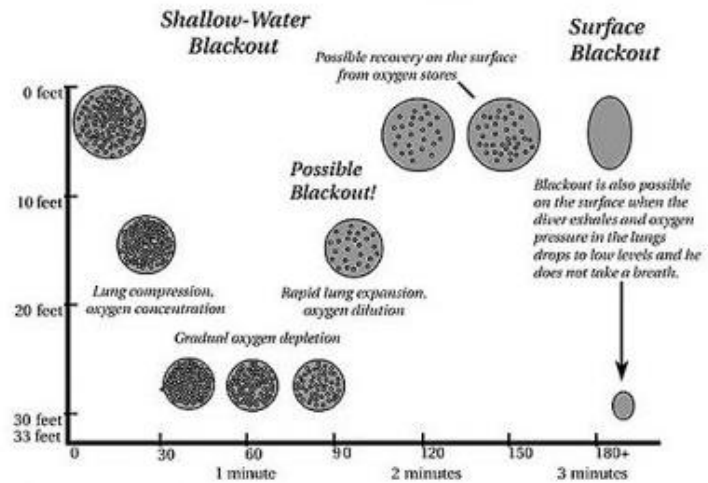
As you descend underwater, your body will be under greater pressure because of the weight of the water above you.

Boyle's law states the greater the pressure placed upon a volume of gas, the lesser the volume will be and the greater the density it will have.

Basically, on the way down, gasses will compress and on the way up they will expand. That means that as a diver makes the decent, the air in his/her mask, sinus cavity, ears, and lungs will compress causing a vacuum which causes pain. Some airspaces, like your ears and mask, can be equalized by adding air. One technique is to pinch your nostrils every few feet and slightly blow every few feet on the way down. If you feel pain or discomfort you should go up until the pressure stops and try again. By equalizing, you will find that greater depths will be attainable.



Shallow water blackouts are caused by a lack of oxygen. As a diver descends, the oxygen is compressed and there is a greater partial pressure of oxygen than at the surface. The diver feels fine and in control. As the oxygen stores are depleted because of tissue consumption, carbon dioxide is released and detected by chemo-receptors. The chemoreceptors trigger the breathing response urging the diver to return to the surface.



As the diver ascends, the air chambers (aka your lungs) expand causing the remaining oxygen molecules to dilute into the larger space. The oxygen becomes so diluted that the brain decides that it cannot support the body and shuts down everything but the brain and causes the circulatory system to funnel all remaining oxygen to sustain the brain. At this time the divers body goes limp, the esophagus tightens, the back arches, and arms are extended down and outward at waist level. The esophagus will remain tight for a few minutes before it relaxes, allowing water to enter the lungs.

Shallow water blackout is life threatening. **If you ever become light headed, lose vision, experience tingling or tunnel vision, you have had a very close call with shallow water blackout.** The best way to avoid shallow water blackout is to dive conservatively and take long surface intervals in between to reoxygenate.

Body Position and Equalizing

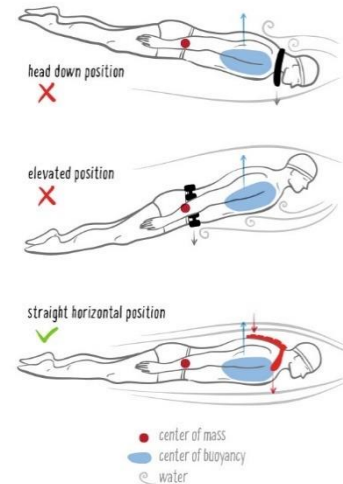
As you prepare for your dive you should be floating horizontally on the surface. This not only conserves oxygen, it places you in the correct body position to start your dive. After your final breath, bend 90° at the waist and lift one leg high into the air. By doing this you will drive your body underwater with minimal effort. You should not begin kicking until both of your legs are underwater. As you are kicking down be sure to equalize your ears and sinuses. Pay attention to your body position as you swim underwater. Creating too much drag wastes energy.

Practicing

Practicing should always be done with a buddy. Freediving is not a competitive sport; it is an art form. Your buddy should be of equal experience so that they may assist you if needed. Practice the one man down rule. The diver should signal his spotter that they are going down. The diver descends and ascends. The spotter should allow adequate recovery time before he signals to begin his dive. This will ensure that you are both rested to help each other and that you are paying attention to each other. As you practice your skill level will increase.

Equipment

As with any sport the right equipment can make a difference. Most of our masks are low volume. This means that there is only a small air space inside the mask. Having a low volume mask is important because you will not have to add much air from your nose to equalize the mask. If you intend to pursue free diving as a sport you should purchase specialized equipment suited for you.

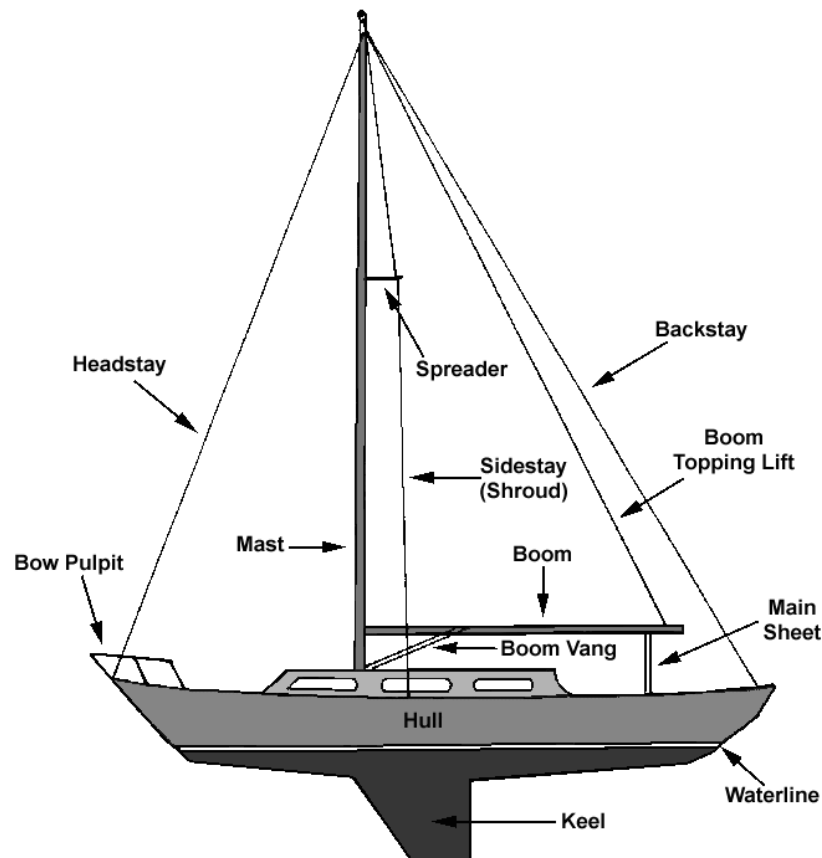
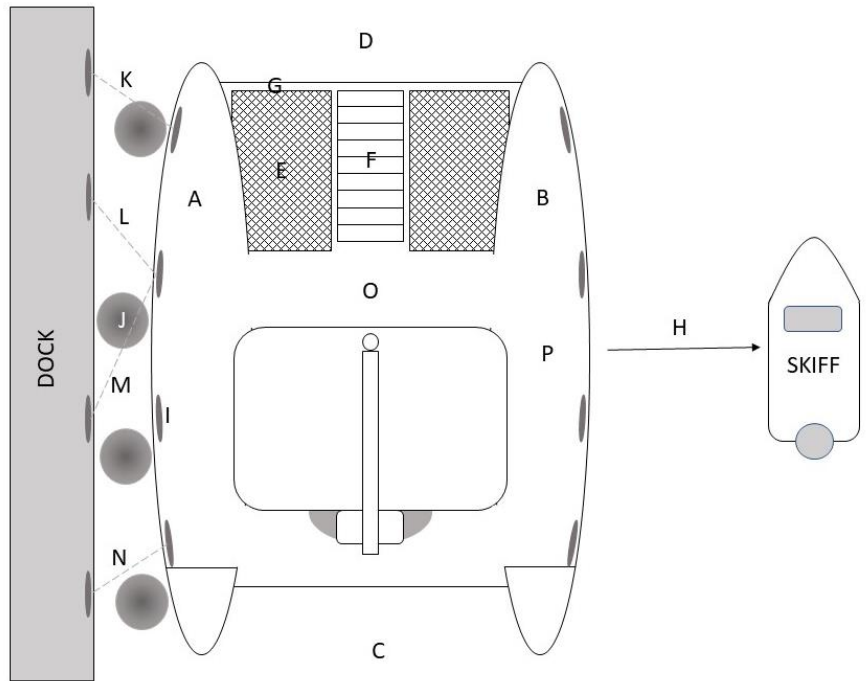


Sailing 101

For various portions of Sailing 101 we will be referencing *The Complete Sailor* by David Seidman.

Basic Terminology

- A. Port
- B. Starboard
- C. Aft
- D. Fore
- E. Trampolines
- F. Ladder
- G. Seagull Striker
- H. Abeam
- I. Cleat
- J. Fender
- K. Bowline
- L. Spring (forward)
- M. Spring (back)
- N. Sternline
- O. Decks
- P. Midship



Standing Rigging

Most of our trilogy catamarans are either sloop rigged or fractional rigs. The standing rigging is best described in [*The Complete Sailor*](#) on page 84 under Standing Rigging.

Running Rigging

Running rigging are lines used to control the sails a boom. Reference [*The Complete Sailor*](#) pages 32-33 and 86.

Hoisting and dousing the Main Sail

To hoist the main sail you first need to set the halyard. The halyard is the line leading up to the top of the mast that will pull the mainsail up. Be sure to check that it is routed around lazy jacks and is not tangled on the shrouds or spreaders. When the command is given to raise the main sail, it should be done quickly. The longer it takes, the harder it is. As the main reaches the top the mainsheet will be loosened to allow the boom to swing freely. Watch your head. Tighten the main by cranking the winch. Feel the tension on the tack. When it is taught, the sail is fully raised. Coil or flake out the halyard so the main can be dropped quickly.

Dousing the main is a bit easier than hoisting. The Captain will head to the wind (bring the boat into the wind). When the command is given, lower the first few feet slowly to allow the boom to be guided into the cradle. When the boom is secure in the cradle and the main is sheeted in, you can lower the rest of the main. DO NOT DROP THE MAIN. Doing so will break the cars over time. Keep it controlled as you lower the main sail. This is especially the case in light winds. For more on raising the sails see [*The Complete Sailor*](#) page 35.

Hoist and douse the jib

Our boats are equipped with roller furling jibs. A roller furling jib means that the jib is stored on a drum attached to the forestay. There is a roller furling line used to deploy the jib versus a jib halyard on conventional rigs. The roller furling line should be paid out in a conventional manner so that it can be stopped once the captain has determined the right amount of sail. Further instructions can be found in [*The Complete Sailor*](#) page 32,33, and 35.

Dousing the jib occurs before dropping the main sail. The captain will turn with the wind to relieve the pressure on the sail. In light winds, the sail can be pulled in by hand. In heavy winds, the windlass can be used to aid furling the sail. Make sure there are 3-4 wraps on the drum and do not over tighten the sail. Make sure all the sail is wrapped, small flags of material can work loose over time or overnight, setting a sail with no one is watching.

Winches

Read over [*The Complete Sailor*](#) page 91 to understand mechanical advantages. A few key guidelines will keep you safe when working with winches. First and foremost, if you don't know, ask. Improper use of a winch under load can lead to severe crippling or death. An average load can be several thousands of pounds of pressure.

When laying wraps on a winch, the line should always wrap in a clockwise direction. A minimum of 3-4 wraps should be made if the line will come under load. If not, 2 wraps should be sufficient. When cranking a line under load, ensure that it is tailed. [*The Complete Sailor*](#) page 91. The slightest loop in a

line on the drum of a winch can lose the entire line and load. Tailing a line will prevent this type of accident.

Easing a line under load should be done with one hand holding the drum and the other paying out line. The hand holding the drum should apply pressure with the palm of the hand with fingers and thumbs away. The hand easing the line should pay out about 6 inches at a time while keeping the hand more than a foot away from the drum. These distances greatly improve your chances of not getting a finger caught in the wrong place should things go wrong. **If you happen to loose the line, let go.** Severe burn can occur if you try to muscle that much pressure.

Clam, Jam, and regular cleats

Reference *The Complete Sailor* page 146.

Seamanship

Docking

When docking it is essential that the crew communicates with the captain. The crew is the eyes and ears for the captain. To fully understand this, you should make your way to the helm station after the vessel is docked and look around. You will probably notice that you cannot see much when it comes to the dock or cleats.

Communication should be oral and visual. When relaying oral information be sure to yell with your outside voice. When relaying visual information be sure that your hands are where the captain can see them. Things you should be communicating:

- Distance
- Direction
- Obstacles
- Other boats

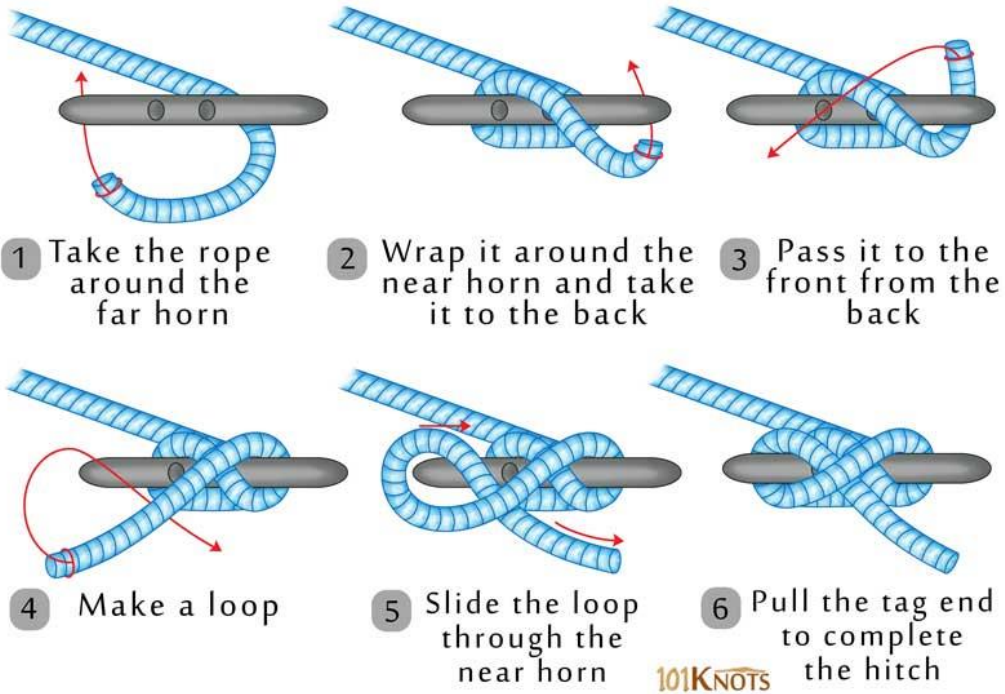
As the vessel approaches the harbor, a crew should post as lookout for obstruction in the channel including surfers. Other crew should adjust fenders and ensure dock lines are at the ready. Fenders should be placed alongside at the areas most likely to come into contact with the dock. They should be at a height that allows for maximum impact coverage on the body of the fender.

As the vessel approaches the dock, the crew member at the closest point of contact usually sounds off first. With oral and visual signals such as "Five feet at the stern" while holding five fingers overhead. Other crew members should give information as their areas get closer. Be sure to count down if the vessel is less than four feet from the dock. This gives the captain accurate and timely information to dock the vessel under difficult circumstances.

Once a jumpable distance is reached, a crew member should hop off and prepare the secure lines. Do not secure the line until the captain tells you to do so. Securing a spring line causes the boat to pivot and slam into the dock. The captain may ask you to take a wrap or belay a line, this simply means to take a few wraps so they can pivot off your line. Wait until the captain gives you the order to secure your line. A good overview on dock lines and dock work can be found in *The Complete Sailor* pages 58-59.

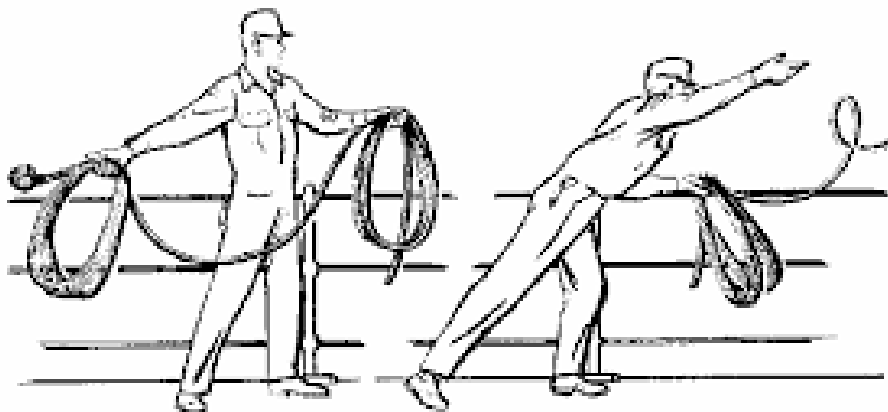
Cleating

Cleat Hitch Instructions



Heaving a line

THROWING A HEAVING LINE

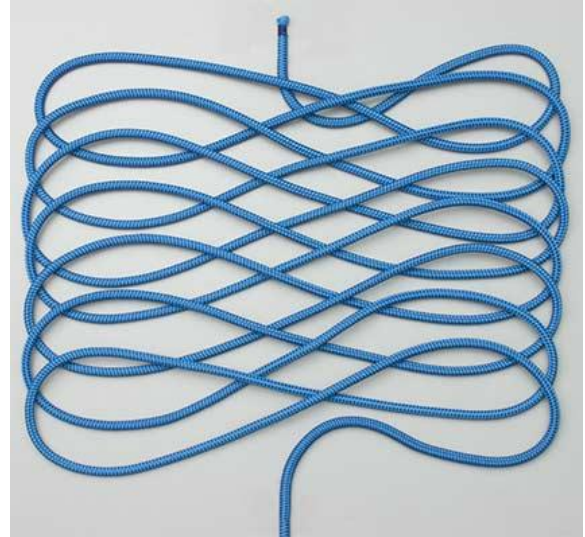


Flake a Line

The object of making up line is to stow it on deck in an orderly fashion and have it available for running if needed. The method of arrangement is known as **Flaking** down a line which can easily be run out without kinking or fowling

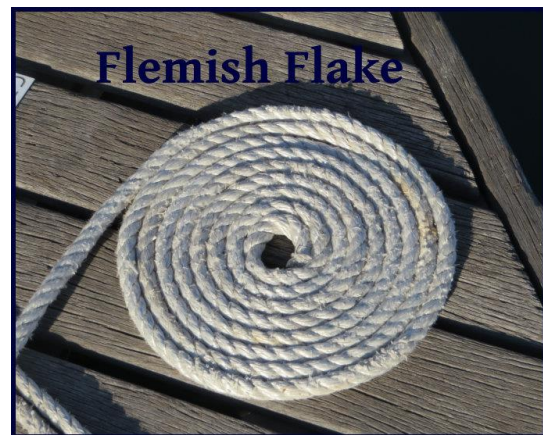
Flaked lines run well in fast run offs such as mooring, anchoring, heaving and lead lines. Flaking down consists of laying the line in figure eight's called flakes. The flakes may overlap or lie clear of each other

To Flake down a line, a short length of the free end is laid out in a straight line and then turned back to form a flat coil. Successive flat coils are then formed, laying the end of each coil on top of the preceding coil rather like a figure 8.



Flemishing

When neatness is desired, a line is flemished down on a dock. This process is accomplished by laying out a line in successive circles flat on the deck with the bitter end in the center. With a flemished line care must be taken to prevent the coils from falling back and fowling the preceding coil. If the coil is left on deck for an extended period, it will discolor and deck and remain wet on the underside of the line.



Knots

This is the list of knots that you should know as a 3rd mate. Download the app, Knots-3D on your phone to keep as a guide.

- Bowline – Good for securing a section of line that will take a heavy load like a mooring line, bowsin chair, etc.
- Half Hitch/Clove Hitch – Good for securing fenders. It is important to remember that these knots can loosen so should always be secured with an additional half hitch
- Sheet Bend – Good for tying two lines together of the same or different diameters
- Stopper knot or figure 8 knot – put at the end of a line to prevent it from going through a clutch
- Properly know how to coil and hang a line

Safety and Emergency Procedures

Heavy Weather

Conditions at sea are continuously changing. There are several steps you can take to improve the crossing for yourself and guests.

1. Close all watertight and weather tight doors, hatches, and airports to prevent taking water onboard or further flooding in the vessel
2. Keep bilges dry to prevent loss of stability due to water in bilges. Use power driven bilge pump, hand pump, and buckets to dewater
3. Ensure customers are seated. Make rounds to reassure them and get the any comfort items. If they need to move, be sure to assist
4. Keep a good attitude. Customers may find it's the most enjoyable part of the trip

Man Overboard

As soon as someone goes in, call "Man Overboard!" and toss flotation such as a life ring, boggie board, surf board, life guard tube, etc. that will mark the spot. One crew member will be designated as the spotter and continually point to the spot where the person went into the water. This person will have no other responsibilities. You may be called to become the spotter. Wait to take full responsibility until you have eyes on the person in the water.

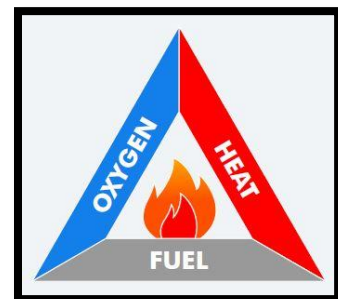
If under sail, you will need to douse the sails before returning to pick up the person. When approaching the captain will position the boat to be on the down wind side of the person. As you approach be sure to shout out distances to the person to the captain, most critically the last 10 feet. If the person is conscious, make sure to shout instructions on where it is safe to be especially if the engines are engaged.

When assisting a person back to the boat, remember: REACH – THROW – GO. First attempt to reach the person with an extended arm or boat hook. If they are too far or conditions don't allow, throw a life ring with a line or an extra boat line to pull the person back to the vessel. Be mindful of the boats position to avoid propping the line. Lastly, and only if all other resources are exhausted, enter the water to retrieve the person. By entering the water, you are now putting yourself at risk, so this is only advised after other efforts have failed.

If the person is not immediately located, notify the Coast Guard and other vessels in the vicinity by VHF radio or telephone. Continue a grid search of the area the person was last spotted taking into consideration wind and sea conditions that could have moved them. Continue searching until released by the Coast Guard.

Fire

A fire need heat, fuel and oxygen (minimum of 16%) to burn. A lack of any of the three elements will extinguish the fire. There are four different classes of fire.



CLASSES OF FIRE AND FUEL SOURCES	
Class A (Ash)	Common combustibles such as wood, paper, cloth, rubber, and plastic

Class B (Black Ash)	Flammable or combustible liquids such as gasses, greases or petroleum-based products
Class C (Current)	Energized circuits, conductors, equipment or appliances
Class D (Dust)	Combustible metals such as magnesium, titanium, potassium, or sodium

Most fire extinguishers are AB or ABC. The range on small fire extinguishers is 5 foot; on larger extinguishers it is 8 foot. When using an extinguisher, be sure to aim at the base of the fire. If you are unable to extinguish the flames retreat from the compartment and close the door.

Fire on a vessel is a life-threatening emergency and should first be reported to the captain. After notification, the captain will instruct the crew of their duties. The most important is crowd control – this crew members sole responsibility is to keep the passengers away from the source and upwind of the smoke. If it becomes necessary to abandon ship, they will also be responsible for the distribution of PFD's.

When fighting a fire on board follow these steps:

1. Cut off air supply to fire – close items such as hatches, ports, doors, ventilators, and louvers, and shut off ventilation systems
2. Cut off electrical system supply to affected compartment if possible
3. If safe, immediately use portable fire extinguishers at base of flames for flammable liquid or grease fires or water for fires in ordinary combustible materials. Do not use water on electrical fires.
4. Maneuver vessel to minimize effect of wind on fire
5. If unable to control fire, immediately notify the Coast Guard and other craft in the vicinity by telephone or VHF radio
6. Move passengers away from fire, have them put on life jackets, and if necessary, prepare to abandon the vessel

Most fires that occur in our industry are in the engine room. If the fire is occurring in a sealed compartment, identify the location of the fire (it may be moving) and look for visible signs such as heavy smoke or blistering decks or bulkheads. If you cannot find a source of heat, feel at the top of the bulkheads with the back of your non-dominant hand. If there is a lot of heat, DO NOT OPEN THE COMPARTMENT. Doing so can cause a back draft resulting in an explosion. Inform the captain. If the fire is in the engine room, the captain will instruct you to deploy the fuel shut-off and air vent shut off for that engine.

The captain may choose to also deploy the fixed CO2 fire buoy in the compartment. Afterwards, they will inform you when it is safe to open the compartment and enter with additional extinguishers. Fire on a vessel is a life-threatening emergency. You should familiarize yourself with the location of the air vents, fuel shut-offs and firefighting apparatus.

Abandon Ship

1. If an abandon ship seems plausible, notify the Coast Guard and surrounding vessels by following the Emergency Broadcast place card posted by the VHF radio
2. At the command of the master, have all passengers don lifejackets

3. Prepare the life rafts. DO NOT permanently affix them to the vessel (ex. make them off to a cleat)
4. Make sure to have an accurate count of all soles on board
5. Divide the passengers into smaller groups and assign to a crew member
6. DO NOT abandon the vessel until forced to do so. When leaving the vessel, take the EPRB, a hand held radio and anything that can float (bogie boards, life tubes, etc.)
7. Once away from the vessel, stay as close together as possible. Maintain a head count of your group every 20 minutes if not more often. Instruct passengers on how to properly use the life rafts. Give priority to small children and elderly

Lifeguard Duties

Lifeguard equipment requirements

1. Mask, snorkel, and fins
2. Whistle
3. Lifeguard rescue tube with tow strap
4. Surf board

The following lifeguard procedures are the guidelines for daily operation at Trilogy. The captain will monitor and manage the conditions daily and adjust as necessary. There are two different lifeguard types: stationary and roaming. The stationary lifeguard is responsible for scanning the entire snorkel zone. Scanning involves head movement accompanying the scan and should cover 100 ft every 8 seconds. The stationary lifeguard should have their mask, snorkel, fins, and whistle in a reachable range. The roaming lifeguard will be on a surfboard moving between snorkelers as needed. They are required to have their mask/snorkel, fins, and whistle on them always.

Should an incident occur use these steps

1. Identify the level of emergency. If necessary, blow your whistle to alert other lifeguards and the captain for assistance
2. As you approach, first make sure you are not putting your self in harms way. If you are dealing with an active downer (someone conscious struggling at the surface) make sure to have something between you and the person to prevent them using you as flotation.
3. Bring the person back to the boat/beach. How to do this depends on the situation. You can use your surfboard and double paddle, you can use a rescue tube to support the person, etc.
4. Once back to the boat/beach:
 - a. Conscious person: help them up the ladder/beach. Talk with them and make sure they are ok. Have the onboard lifeguard either take over the situation so you can get back to your duties, or rotate responsibilities so they would become the new in-water lifeguard.
 - b. Unconscious person: Use the backboard to get the person up the steps/beach. Begin CPR immediately. Send someone for AED and O2 if not already available. If on a vessel, make sure the vessel is ready to depart. Continue performing CPR and monitoring vitals until you are met by paramedics.

The number one responsibility of a lifeguard is your own safety. Always have a mask, snorkel, fins, flotation and whistle. Never place yourself in a position to be the next victim.